Ericsson Microwave Outlook

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Backhaul capacity evolution

Current 5G and emerging 6G radio access network (RAN) deployments vary widely, creating a need for backhaul networks that can efficiently support RAN sites with diverse bandwidth requirements.

Mobile network data continues to increase, rising by 22 percent worldwide between Q1 2025 and Q1 2026, with 5G now carrying 50 percent of all mobile data traffic globally across more than 3 billion subscriptions[1]. Most of this growth is in 5G, as 5G population coverage, 5G mid-band coverage, and 5G mobile subscriptions increase worldwide[1]. Regional variations remain large with several markets below 50 percent as of 2025, indicating that the 5G expansion will continue well into the 2030s[1]. This will further increase the backhaul capacity needed at upgraded sites.

New services, such as artificial intelligence (AI) and smart glasses, are expected to drive a significant increase in uplink data compared with the current situation. Since most mobile backhaul networks offer the same downlink and uplink bandwidth, and uplink capacity is usually underutilized, this shift is not expected to have a significant impact on the transport networks or dimensioning guidelines.

6G is now on the horizon and the initial commercial services for early adopters are expected around 2030. While 6G offers many new network capabilities, the largest impact on backhaul network dimensioning will come from new spectrum assets in the centimetric range and higher modulation. Both will increase the achievable user data throughput.

Typical backhaul capacity requirements for distributed RAN three-sector end sites are shown in Figure 1 and calculated considering variations in deployment and usage.

Capacity variations remain significant, both between and within markets as well as across different deployment areas within service provider networks. This is driven both by the amount and type of spectrum available to service providers and their deployment choices, together with RAN features such as coordination services and multiple input, multiple output (MIMO) layers.

5G high-band deployments are limited to a few regions worldwide and are not included in the capacity table. High-band can significantly increase the required backhaul bandwidth. For example, three sectors of 800 MHz 4T/4R high-band can require more than 10 Gbps backhaul capacity, which must be considered if deployed.

The increased diversity in RAN deployments and features requires backhaul networks to offer efficient connectivity solutions across the full range of bandwidths shown in Figure 1. A thorough analysis of mobile network performance targets is key to finding the correct backhaul dimensioning and building the right transport network.

Modern microwave solutions can efficiently cover the wide range of bandwidths and geographical domains required in current and future mobile backhaul networks as described in Figure 1. They offer technologies such as E-band and multi-band for very high bandwidth needs, and wide channels and multi-carrier for longer hops with high performance. w

		2026	2029	2032
4G & 5G	Urban	1 Gbps - 3 Gbps	3 Gbps - 10 Gbps	5 Gbps - 15 Gbps
	Sub-Urban	300 Mbps - 1 Gbps	1 Gbps - 5 Gbps	2 Gbps - 8 Gbps
	Rural	150 Mbps - 500 Mbps	300 Mbps - 2 Gbps	500 Mbps - 3 Gbps
4G, 5G & 6G introduction	Urban	1 Gbps - 3 Gbps*	3 Gbps - 10 Gbps*	7 Gbps - 20 Gbps
	Sub-Urban	300 Mbps - 1 Gbps*	1 Gbps - 5 Gbps*	3 Gbps - 10 Gbps
	Rural	150 Mbps - 500 Mbps*	300 Mbps - 2 Gbps*	500 Mbps - 3 Gbps**

* 6G spectrum introduction beyond 2029 ** No 6G spectrum additions expected in rural areas

Figure 1. Backhaul capacity per distributed site

Source: Ericsson (2026)

[1] All subscription, traffic and commercial 5G SA launch information is from the Ericsson Mobility Report, June 2026

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